CA - PMM

Project Name: LIM2

OCIO Project #:

Department: Ca Air Resources Board

Revision Date:

Concept Statement

Description

Brief description of the proposed project:

The ARB proposes to implement an industry standard solution that will replace the existing Laboratory Information Management System (LIMS) that is reaching the end of life in approximately one year. This system will enable data transfer, data storage, and data reporting for all chemical analyses conducted by MLD's Northern Laboratory Branch in support of the PM2.5, PM10, Toxics, Consumer Products, Volatile Organic Compound, and Special Study programs. The solution will enable the laboratories to maintain the existing database through contracts and required revisions/upgrades as necessary to maintain LIMS during the transistion, ensure communication between analytical instrumentation and the Laboratory Domain, and the transfer of data to U.S. EPA's Air Quality System repository of air quality data.

Need Statement

High Level Functional Requirements:

LIMS2 must be compatible with other enterprise-level data bases systems that reside within the ARB, such as the Enforment systems. In addition, the system must interface to US/EPA databases, ADAM and AQS as well as others. The system must be adaptabile for interfacing to existing laboratory equipment; must be flexible to adapt to changing program requirements and/or changes in US/EPA reporting requirements; must fit into the ARB, Cal/EPA and the State's Enterprise Architectures; must be able to interface to a variety of technical software systems that operate the analytical instrumentation; must be sized appropriately to support the required 5 year data retention cycle; must be capable of running 24/7 to gather data from laboratory equipment; and must be expandable to support additional data fields required of the State and US/EPA air quality programs.

What is Driving This Need?

The primary business driver for replacing the current system is that both the exisiting hardware and software are reaching end of life. In addition, the current software is proprietary, which makes it both time consuming and expensive to make relatively simple changes to the systems such as replacing the data collection devices that interface to the system or making minor changes in data fields. The LIMS system supports mission critical functions within ARB, providing data collection, analysis and reporting functionality to the ARB as well as to Federal monitoring programs. A system must remain in place to meet the requirement to transfer, store and report to the federal government within 90 day cycles. The legacy LIMS system has not been updated in over 10 years; is no longer able to support the current workloads within adequate time frames; and must be replaced..

Risk to the Organization if This Work is Not Done:

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There is a risk that the State will lose Federal Funding, if data is not submitted to US/EPA. In addition, the ARB will be unable to assess attainment status within California and there will be no basis for establishing regulations and/or meeting standards. Other risks are related to the loss of appropriate data to support the enforcement of Consumer Product regulations.

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Benefit Statement

Intangible Benefits

Process Improvements (describe the nature of the process improvement):

The migration to a more standard system will allow ARB to collect and report additional information on data points; including the associate quality control information. The migration away from the current propietray software will increase efficiencies.

Other Intangible Benefits:

An indirect benefit of the updated system is that additional air quality information can be provided to the public via the AQS and/or ADAM systems that interface to LIMS.

Tangible Benefits

Revenue Generation (describe how revenue will be generated):

A fully functional LIMS system is required in order to receive Federal grant money associated to the collection and reporting of air quality data.

Cost Savings (describe how cost will be reduced):

It is expected that the efficiencies realized through the development of an updated LIMS system will result in cost savings related to required integration functions that take place as laboratory equipment is replace or updated. Additional analysis related to this factor will be explored in the FSR.

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Cost Avoidance (describe the cost and how avoided):
Cost associated to integrate with various Laboratory equipment will be minimized by migrating to underlying software that is mainstream and more in line with current industry standards.

Risk Avoidance (describe the risk and how avoided):
As a core supporting business function within the ARB, risks to the organization will be minimized by ensuring that the a new system is operational by the time the current system reaches end of life. This will enable the ARB to continue to collect and submit required data throughout the transition stages.

Improved Services:
The expected outcome will improve the services that are provided to other business units with the ARB as well as to US/EPA. For example, the improved interfaces to other enterprise-wide systems within the ARB will provide more efficient methodologies for validating information required of the Enforcement Program, allowing the ARB to be more responsive to the public during the citation process.

Consistency

"No" Responses →		Rationale	Action Required
Enterprise Architecture	Yes		
Business Plan	Yes		
Strategic Plan	Yes		

Impact to Other Entities

Nature of Impact to Other Entities

Entity:
Describe the nature of the impact:
ARB: Business entities within ARB, such as the Enforcement Division rely heavily on the responsiveness of LIMS. The failure to monitor, collect and report accurate air quality information affects the ability of ARB to establish regulations and will result in the inability to provide data this is fundamental in measuring

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California's progress towards meeting air quality standards or targets.

Entity:

Describe the nature of the impact:

Cal/EPA: The data collected to LIMS is shared with other Boards and Departments (BDOs) within Cal/EPA via systems such as ADAM. Failure to continue to proved this data decreases the ability of Cal/EPA to assess and review the overall environmental impact or status of environmental programs.

Entity:

Describe the nature of the impact:

US/EPA: US/EPA requires the submittal of California's air quality data - failure to submit data resulted in the loss of federal funding or grants.

Entity:

Describe the nature of the impact:

The Public: The data collected by the underlying LIMS systems is used to report Air quality information to the public. Failure to provide this information is against ARB's 'Transparency in Government' policies.

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Solution Alternatives

Alternative 1:
The completion of a FSR will be required to develop a comprehensive description of the specific alternatives

Technical Considerations for Alternative 1:				
During the FSR analysis phase a more detailed listing of technical and functional requirements will be outlined. At a high level, the alternatives will be weighed on their ability to meet requirements such as adaptability to existing laboratory instrumentation; software viability or longevity; the ability of the system to interface to other ARB and US/EPA data base systems; and the quality of the data sets the system will support and tabulate.				
ROM Cost:	$600,000	to	$1,000,000	**Note: high end of range must not exceed 200% of low end of range**

Alternative 2:
A high level alternative that will be considered in the FSR may include the option of outsourcing the LIMS functions.

Technical Considerations for Alternative 2:		
ROM Cost:	to	**Note: high end of range must not exceed 200% of low end of range**

Alternative 3:

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Technical Considerations for Alternative 3:		
ROM Cost:	to	**Note: high end of range must not exceed 200% of low end of range**

Recommendation

Comparison:

Alternative 1	ROM Cost			Risk
	$600,000	-	$1,000,000	
Alternative 2	**ROM Cost**			**Risk**
	$0	-	$0	
Alternative 3	**ROM Cost**			**Risk**
	$0	-	$0	

Conclusions:

1	More in depth analysis is required
2	
3	
4	

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Recommendation:

ARB recommends moving forward with this project by completing a comprehensive FSR as soon as possible. Risks associated with maintaining the outdated system will increase dramatically if that system is not replaced with approximately 18 months.

Project Approach *(if known)*

System Complexity:				System Business Hours: *(e.g., 24x7, 9am-5pm) :*	24x6	
Architecture	☐ Mainframe	☑ Client Server	☑ Web Based		Num. of New Databases:	
Technology	☐ New	☐ New to Staff	☐ In-House Experience		Interfaces:	
Implementation	☐ Central Site	☐ Phased Roll-out			Num. of Sites:	
M & O Support	☑ Contractor	☐ Data Center	☐ Project	☑ In House		
Procurement Approach: To be determined					Number of Procurements:	
Open Procurement?		Delegated Procurement?				
Scope of Contract	☐ Development	☐ Implementation	☐ M & O	☐ Other:		
Anticipated Length of Contract:		Years /	extensions for	years		